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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,406	06/26/2003	Mohamad Shaheen	42P16009	8443

7590

06/08/2005

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EXAMINER

LOKE, STEVEN HO YIN

ART UNIT PAPER NUMBER

2811

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/608,406

Applicant(s)

SHAHEEN ET AL. 

Examiner

Steven Loke

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 March 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2 and 4-8 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1, 2 and 4-6 is/are rejected.  
7) ☒ Claim(s) 7, 8 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. Claims 1 and 4 are objected to because of the following informalities: Claim 1, line 9, the phrases "439C" and "451C" are unclear whether they are being referred to "439 degrees C" and "451 degrees C", respectively. Claim 4, line 2, the phrases "419C" and "430C" are unclear whether they are being referred to "419 degrees C" and "430 degrees C". Appropriate correction is required.
2. Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, the parent claim of claim 4, discloses the first annealing temperature is between approximately 439 degrees C and approximately 451 degrees C. However, it is unclear why claim 4 discloses the first annealing temperature is between approximately 419 degrees C and approximately 430 degrees C. The first annealing temperature of claim 4 is outside the range of the annealing temperature of claim 1. The annealing temperature of claim 1 is used for the thermal cleave operation for the wafer separation while the annealing temperature of claim 4 is used for the mechanical cleave operation for the wafer separation (paragraph [0029] of applicant's specification). It is believed that claim 4 should not depend upon claim 1.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2 and 6 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Bryan.

In regards to claim 1, Bryan shows all the elements of the claimed invention in figs. 1-6. It is an integrated circuit (col. 1, lines 8-19), comprising: a semiconductor substrate [31]; a device layer [19] coupled to the substrate, the device layer having been coupled to the substrate via a transfer process comprising: doping the device layer with a first quantity of a first ionic material [17] (silicon) and a second quantity of a second ionic material [22] (hydrogen); annealing (heating) (col. 5, lines 44-54, col. 6, lines 1-5) the device layer and semiconductor substrate at a first annealing temperature.

In regards to claim 1, the process limitation of how the device layer is formed has no patentable weight in claim drawn to structure. Note that a product by process claim is directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and *In re Marosi et al*, 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a product by process claim, and not the patentability of the process, and that an old or obvious product by a new method is not patentable as a product, whether claimed in product by process claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw makes clear.

Therefore, the phrase "epitaxial layer", the phrase "a transfer process", and the phrase "annealing the epitaxial layer and semiconductor substrate at a first annealing temperature, wherein the first annealing temperature is between approximately 439C and approximately 451C" are thus non-limiting.

In regards to claim 2, Bryan further discloses the sum of the first quantity of the first ionic material ( $10^{14}$  atoms/cm<sup>2</sup>) and the second quantity of the second ionic material ( $10^{14}$  atoms/cm<sup>2</sup>) is no greater than approximately  $2 \times 10^{16}$  cm<sup>-2</sup>.

In regards to claim 6, Bryan further discloses the second ionic material comprises hydrogen ions to react with the device layer at an energy level of approximately 40 KeV (col. 4, lines 57-59).

5. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Loke whose telephone number is (571) 272-1657. The examiner can normally be reached on 8:20 am to 5:50 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sl  
June 5, 2005

Steven Loke  
Primary Examiner

A handwritten signature in cursive script that reads "Steven Loke".